

Page 25, line 7, rewrite "fiber ferrules 421" as --fiber ferrules 422--.

IN THE CLAIMS

Please cancel claims 1-59 without prejudice.

Please add new claims 60-~~61~~⁶⁹ as follows:

1 --60. (New) A fiber optic module comprising:

2 a first optoelectronic device to couple photons into or
3 receive photons out of a first optical fiber;

4 a first printed circuit board coupled to the first
5 optoelectronic device parallel to an optical axis of the first
6 optoelectronic device, the first printed circuit board having
7 one or more pins; and

8 a shielded housing around the first printed circuit board
9 to reduce electromagnetic interference (EMI).

1 61. (New) The fiber optic module of claim 60 wherein,

2 the first optoelectronic device has a first terminal
3 electrically coupled to one side of the first printed circuit
4 board and a second terminal electrically coupled to an opposite
5 side of the first printed circuit board.

1 62. (New) The fiber optic module of claim 60 wherein,
2 the first printed circuit board is a vertical printed
3 circuit board perpendicular to a horizontal plane and the
4 optical axis of the first optoelectronic device is parallel to
5 the horizontal plane.

1 63. (New) The fiber optic module of claim 60 wherein,
2 the fiber optic module mounts to a system printed circuit
3 board such that the first printed circuit board is perpendicular
4 to the system printed circuit board and the optical axis of the
5 first optoelectronic device is parallel to the system printed
6 circuit board.

1 64. (New) The fiber optic module of claim 63 wherein,
2 the one or more pins of the first printed circuit board
3 couple to the system printed circuit board.

1 65. (New) The fiber optic module of claim 63 wherein,
2 the one or more pins of the first printed circuit board
3 couple to a connector of the system printed circuit board.

1 66. (New) The fiber optic module of claim 60 further
2 comprising:

3 a first lens to focus photons between the first
4 optoelectronic device and the optical fiber.

1 67. (New) The fiber optic module of claim 60 wherein:
2 the shielded housing is electrically coupled to ground.

1 68. (New) The fiber optic module of claim 67 wherein:
2 the shielded housing electrically couples to ground by
3 coupling to a system chassis.

1 69. (New) The fiber optic module of claim 67 wherein:
2 the shielded housing electrically couples to ground through
3 a trace on the first printed circuit board which is coupled to
4 one of the one or more pins of the first printed circuit board.

1 70. (New) The fiber optic module of claim 60 wherein,
2 the shielded housing has a base, the base having one or
3 more openings from which the one or more pins of the first
4 printed board extend.

1 71. (New) The fiber optic module of claim 60 further
2 comprising:
3 a base coupled to the shielded housing, the base having one
4 or more openings from which the one or more pins of the first

5 printed board extend.

1 72. (New) The fiber optic module of claim 60 further
2 comprising:

3 a nose to receive an optical fiber connector and hold an
4 optical fiber substantially fixed and aligned with the optical
5 axis of the first optoelectronic device.

1 73. (New) The fiber optic module of claim 72 wherein,
2 the nose provides shielding to reduce electromagnetic
3 interference (EMI).

4 74. (New) The fiber optic module of claim 60 further
5 comprising:

6 a second optoelectronic device to receive photons out of or
7 couple photons into a second optical fiber;

8 a second printed circuit board parallel to the first
9 printed circuit board, the second printed circuit board coupled
10 to the second optoelectronic device parallel to an optical axis
11 of the second optoelectronic device, the second printed circuit
board having a second plurality of pins; and wherein,

12 the shielded housing is around the first and second printed
13 circuit boards to reduce electromagnetic interference (EMI).

1 75. (New) The fiber optic module of claim 74 wherein,
2 the second optoelectronic device has a first terminal
3 coupled to one side of the second printed circuit board and a
4 second terminal coupled to an opposite side of the second
5 printed circuit board.

1 76. (New) The fiber optic module of claim 74 wherein,
2 the shielded housing has a base, the base having openings
3 from which the one or more pins of the first printed board
4 extend and the one or more pins of second printed circuit board
5 extend.

1 77. (New) The fiber optic module of claim 74 further
2 comprising:
3 a base coupled to the shielded housing, the base having
4 openings from which the one or more pins of the first printed
5 board extend and the one or more pins of second printed circuit
6 board extend.

1 78. (New) The fiber optic module of claim 74 further
2 comprising:
3 a nose to receive a first optical fiber connector and hold
4 a first optical fiber substantially fixed and aligned with the

5 optical axis of the first optoelectronic device and to receive a
6 second optical fiber connector and hold a second optical fiber
7 substantially fixed and aligned with the optical axis of the
8 second optoelectronic device.

1 79. (New) The fiber optic module of claim 78 wherein,
2 the nose provides shielding to reduce electromagnetic
3 interference (EMI).

1 80. (New) The fiber optic module of claim 74 wherein,
2 the first printed circuit board and the second printed
3 circuit board are vertical printed circuit boards perpendicular
4 to a horizontal plane.

1 81. (New) The fiber optic module of claim 74 wherein,
2 the first printed circuit board and the second printed
3 circuit board are vertical printed circuit boards perpendicular
4 to a system printed circuit board when the fiber optic module is
5 mounted thereto.

1 82. (New) The fiber optic module of claim 74 further
2 comprising:
3 an internal shield between the first printed circuit board
4 and the second printed circuit board and parallel therewith

5 and wherein, the shielded housing is around the first
6 printed circuit board, the internal shield, and the second
7 printed circuit board to reduce electromagnetic interference
8 (EMI).

1 83. (New) A fiber optic module for coupling photons between
2 optoelectronic devices and optical fibers, the fiber optic
3 module comprising:

4 a base to mount the fiber optic transceiver in a system to
5 couple photons between optoelectronic devices and optical
fibers;

6 a first printed circuit board perpendicular to the base,
7 the first printed circuit board having a pin inserted through a
8 first opening in the base;

9 a first optoelectronic device having terminals coupled to
10 the first printed circuit board, the first optoelectronic device
11 having an optical axis parallel to the first printed circuit
12 board;

13 a second printed circuit board perpendicular to the base
14 and parallel to the first printed circuit board, the second
15 printed circuit board having a pin inserted through a second
16 opening in the base;

17 a second optoelectronic device having terminals coupled to
18 the second printed circuit board, the second optoelectronic

20 device having an optical axis parallel to the second printed
21 circuit board; and
22 a shielded housing coupled to the base, the shielded
23 housing to encase the first printed circuit board and the second
24 printed circuit board to reduce electromagnetic interference
25 (EMI).

1 84. (New) The fiber optic module of claim 83 further
2 comprising:

3 an internal shield between the first printed circuit board
4 and the second printed circuit board and parallel therewith
5 and wherein, the shielded housing encases the first printed
6 circuit board, the internal shield, and the second printed
7 circuit board to reduce electromagnetic interference (EMI).

1 85. (New) The fiber optic module of claim 83 wherein,
2 the internal shield provides shielding to reduce crosstalk
3 between the first printed circuit board and the second printed
4 circuit board.

1 86. (New) The fiber optic module of claim 83 further
2 comprising:

3 a first lens to focus photons between the first
4 optoelectronic device and a first optical fiber; and

5 a second lens to focus photons between the second
6 optoelectronic device and a second optical fiber.

1 87. (New) The fiber optic module of claim 83 wherein,
2 the first printed circuit board and the second printed
3 circuit board are vertical printed circuit boards perpendicular
4 to a horizontal plane.

1 88. (New) The fiber optic module of claim 83 wherein,
2 the first printed circuit board and the second printed
3 circuit board are vertical printed circuit boards perpendicular
4 to a horizontal system printed circuit board when the fiber
optic module is mounted thereto.

1 89. (New) The fiber optic module of claim 83 further
2 comprising:

3 a nose coupled to the base, the nose to receive an optical
4 fiber connector to align a pair of optical fibers with the
5 optical axis of the first optoelectronic device and the optical
6 axis of the second optoelectronic device.

1 90. (New) The fiber optic module of claim 89, wherein,
2 the nose includes shielding to reduce electromagnetic
3 interference.

1 91. (New) The fiber optic module of claim 83, wherein,
2 the fiber optic module is a fiber optic transceiver and
3 wherein

4 the first optoelectronic device is a photodetector,
5 and
6 the second optoelectronic device is an emitter.

1 92. (New) The fiber optic module of claim 84, wherein,
2 the emitter is a vertical cavity surface emitting laser
3 (VCSEL).
4

1 93. (New) The fiber optic module of claim 83 wherein,
2 the first optoelectronic device has a first terminal
3 electrically coupled to one side of the first printed circuit
4 board and a second terminal electrically coupled to an opposite
5 side of the first printed circuit board, and
6 the second optoelectronic device has a first terminal
7 electrically coupled to one side of the second printed circuit
8 board and a second terminal electrically coupled to an opposite
9 side of the second printed circuit board.

1 94. (New) A method of assembling a fiber optic module, the
2 method comprising:

3 providing a first printed circuit board and coupling
4 terminals of a first optoelectronic device to the first printed
5 circuit board such that an optical axis of the first
6 optoelectronic device is parallel with the first printed circuit
7 board;

8 providing a second printed circuit board and coupling
9 terminals of a second optoelectronic device to the second
10 printed circuit board such that an optical axis of the second
11 optoelectronic device is parallel with the second printed
12 circuit board; and

13 encasing the first printed circuit board and the second
14 printed circuit board by a shielded housing such that the first
15 printed circuit board is parallel with the second printed
16 circuit board and the optical axis of the first optoelectronic
17 device is parallel with the optical axis of the second
18 optoelectronic device.

1 95. (New) The method of claim 94 further comprising:
2 coupling a base to the shielded housing perpendicular to
3 the first printed circuit board and the second printed circuit
4 board.

1 96. (New) The method of claim 94 further comprising:
2 prior to encasing the first printed circuit board and the

3 second printed circuit board by the shielded housing,

4 inserting an internal shield between the first printed

5 circuit board and the second printed circuit board.

p. 1 97. (New) The method of claim 94 wherein,

2 the first printed circuit board and the second printed

3 circuit board are vertical printed circuit boards perpendicular

4 to a horizontal plane.

15 98. (New) The method of claim 94 wherein,

2 the first printed circuit board and the second printed

3 circuit board are vertical printed circuit boards perpendicular

4 to a horizontal system printed circuit board when the fiber

5 optic module is mounted thereto.

20 99. (New) The method of claim 94 wherein,

2 the first optoelectronic device has a first terminal

3 electrically coupled to one side of the first printed circuit

4 board and a second terminal electrically coupled to an opposite

5 side of the first printed circuit board, and

6 the second optoelectronic device has a first terminal

7 electrically coupled to one side of the second printed circuit

8 board and a second terminal electrically coupled to an opposite

9 side of the second printed circuit board.--